

CLAIMS

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What is claimed is:

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1. An isolated, single domain recombinant AL2 gene encoding a modified transcription activator protein, said recombinant AL2 gene comprising a mutation in the region which encodes from about amino acid 83 to about amino acid 129 of said corresponding wild-type transcription activator protein.
 2. The recombinant AL2 gene of claim 1 wherein said mutation is in the region which encodes from about amino acid 115 to about amino acid 129 of said wild-type transcription activator protein.
 - 10 3. The recombinant AL2 gene of claim 1 wherein said mutation is a deletion and the modified transcription activator protein encoded by said recombinant gene has from one to 29 fewer amino acids than the corresponding wild-type transcription activator protein.
 4. The recombinant AL2 gene of claim 1 wherein said mutation is a substitution of base
15 pairs and said mutant AL2 gene encodes a modified transcription activator protein having an amino acid selected from the group consisting of serine, threonine, proline, cysteine, methionine, lysine, histidine, arginine, asparagine, glutamine, glycine and alanine in place of a hydrophobic amino acid in the C terminal region of the wild-type transcription activator protein.
 - 20 5. The recombinant AL2 gene of claim 1 wherein said mutation is a substitution of base pairs and said mutant AL2 gene encodes a modified transcription activator protein having an amino acid selected from the group consisting of serine, threonine, proline, cysteine, methionine, lysine, histidine, arginine, asparagine, glutamine, glycine and alanine in place of an acidic amino acid in the C-terminal region of in the wild-type transcription activator protein.
 - 25 6. The mutant AL2 gene of claim 1 wherein said mutation is a substitution of base pairs and the modified transcription activator protein encoded by the mutant AL2 gene comprises an alanine or glycine at a position selected from the group consisting of position 119, position 120, position 123, position 124, position 128, and combinations thereof.
 - 30 7. An isolated, double domain recombinant AL2 gene encoding a modified transcription activator protein, said recombinant AL2 gene comprising a mutation in the region which encodes from about amino acid 83 to about amino acid 129 of said transcription activator protein and a second mutation in the region which encodes from about amino acid 23 to about amino acid 43 of said transcription activator protein.

8. The recombinant AL2 gene of claim 7 wherein said first mutation is in the region which encodes from about amino acid 115 to about amino acid 129 of said transcription activator protein.
- 5 9. The recombinant AL2 gene of claim 7 wherein said first mutation is a deletion and said modified transcription activator protein encoded by said mutant gene has from one to 20 fewer amino acids than the corresponding wild-type transcription activator protein.
- 10 10. The recombinant AL2 gene of claim 7 wherein said first mutation is a substitution of base pairs and said recombinant AL2 gene encodes a modified transcription activator protein having an amino acid selected from the serine, threonine, proline, cysteine, methionine, lysine, histidine, arginine, asparagine, glutamine, glycine and alanine in place of a hydrophobic amino acid that is found in the C terminal region of the corresponding wild-type transcription activator protein.
- 15 11. The recombinant AL2 gene of claim 7 wherein said mutation is a substitution of base pairs and said recombinant AL2 gene encodes a transcription activator protein having an amino acid selected from the serine, threonine, proline, cysteine, methionine, lysine, histidine, arginine, asparagine, glutamine, glycine and alanine in place of an acidic amino acid in the corresponding wild-type transcription activator protein.
- 20 12. The recombinant AL2 gene of claim 7 wherein said second mutation is a deletion and said modified transcription activator protein encoded by said recombinant gene has from one to 20 fewer amino acids than the corresponding wild-type transcription activator protein.
- 25 13. The recombinant AL2 gene of claim 7 wherein said second mutation is a substitution of base pairs and said recombinant AL2 gene encodes a modified transcription activator protein in which a plurality of the cyteine residues located in the central region of the corresponding wild-type transcription activator protein are substituted.
- 30 14. The recombinant AL2 gene of claim 7 wherein said second mutation is a substitution of base pairs and said recombinant AL2 gene encodes a modified transcription activator protein which comprises an alanine or glycine at position 40.
15. A vector comprising the mutant AL2 gene of claim 1.
16. The vector of claim 15 wherein said vector is an Agrobacterium.
17. A vector comprising the mutant AL2 gene of claim 7.
18. The vector of claim 17 wherein said vector is an Agrobacterium.
19. A transgenic plant comprising the single domain recombinant AL2 gene of claim 1.
20. A transgenic plant comprising the double domain recombinant AL2 gene of claim 7

21. A method for preparing a plant that is more susceptible to infection with Begomoviruses or Curtoviruses, said method comprising:

a) providing a sample from a plant which is a host for a Begomovirus or a Curtovirus; b) transforming said sample with the vector comprising a single domain

5 recombinant AL2 gene of claim 1

c) generating a plant from said transformed sample of step (b).

22. The method of claim 21 wherein said vector is an Agrobacterium

23. A method of preparing a transgenic plant, comprising

10 a) providing a sample from a plant which is a host for a Begomovirus;

b) transforming said sample with a vector comprising a double domain recombinant AL2 gene of claim 7; and

c) generating a plant from said transformed sample of step (b).

15 24. An isolated nucleic acid encoding the transcription activation domain of the transcription activator protein of TGMV, said nucleic acid comprising the sequence

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